INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

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Commissioner

100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.state.in.us/idem

August 29, 2002

Mr. Harry Philip, V.P.
Lone Star Industries, Inc.
P.O Box 482
Greencastle, Indiana 46135

Re: Minor Source Modification No.
133-16137-00002

Dear Mr. Philip:

Lone Star Industries, Inc. applied for a Part 70 operating permit on October 15, 1996 for a Portland cement manufacturing plant. An application to modify the source was received on June 24, 2002. Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

(a) Four (4) loading hoppers, identified as 485F, 486F, 487F, and 488F, each with a maximum capacity of 12.5 tons and a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the loading hopper 443F.

(b) Four (4) covered belt conveyors, identified as 485V, 486V, 487V, and 488V, each with a maximum throughput rate of 40,000 pounds of raw material per hour, each connected to loading hoppers 485F, 486F, 487F, and 488F, respectively.

(c) Two (2) covered belt conveyors, identified as 489V and 490V, each with a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the loading belt conveyor 441V.

(d) One (1) bucket elevator, identified as 492V, with a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the bucket elevator 441V1.

(e) One (1) covered belt conveyor, identified as 494V, with a maximum throughput rate of 40,000 pounds of raw material per hour.

The proposed Minor Source Modification approval will be incorporated into the pending Part 70 permit application pursuant to 326 IAC 2-7-10.5(l)(3). The source may begin operation upon issuance of the source modification approval.

Pursuant to Contract No. A305-0-00-36, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Yu-Lien Chu, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7871 to speak directly to Ms. Chu. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call (800) 451-6027, press 0 and ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original Signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments

ERG/YC

cc: File - Putnam County
Putnam County Health Department
Air Compliance Section Inspector - Jim Thorpe
Compliance Data Section - Karen Nowak
Administrative and Development - Sara Cloe
Technical Support and Modeling - Michele Boner
TV Reviewer - ERG/Kristin Clapp
TV File - #133-6927-00002

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PART 70 MINOR SOURCE MODIFICATION
OFFICE OF AIR QUALITY

Lone Star Industries, Inc.
3301 South County Road 150 West
Greencastle, Indiana 46135

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Source Modification No.: 133-16137-00002	
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: August 29, 2002

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SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a stationary Portland cement manufacturing plant.

Responsible Official:	Plant Manager
Source Address:	3301 South County Rd. 150 W, Greencastle, IN 46135
Mailing Address:	P.O. Box 482, Greencastle, IN 46135
SIC Code:	3241
County Location:	Putnam
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major source under PSD Major Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission units and pollution control devices:

(a) One alternate raw material feeding system, identified as SF-1, with a maximum throughput rate of 40,000 pounds of raw material (primarily slag) per hour, including the following:

(1) One (1) slag pile, identified as SP1, with a maximum throughput rate of 40,000 pounds of slag per hour.

(2) Four (4) loading hoppers, identified as 485F, 486F, 487F, and 488F, each with a maximum capacity of 12.5 tons and a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the loading hopper 443F.

(3) Four (4) covered belt conveyors, identified as 485V, 486V, 487V, and 488V, each with a maximum throughput rate of 40,000 pounds of raw material per hour, each connected to loading hoppers 485F, 486F, 487F, and 488F, respectively.

(4) Two (2) covered belt conveyors, identified as 489V and 490V, each with a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the loading belt conveyor 441V.

(5) One (1) bucket elevator, identified as 492V, with a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the bucket elevator 441V1.

(6) One (1) covered belt conveyor, identified as 494V, with a maximum throughput rate of 40,000 pounds of raw material per hour.

(7) Paved roads with particulate emissions controlled by vacuum sweeping.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.3 Revocation of Permits [326 IAC 2-1.1-9(5)][326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.4 Removal of the Existing Emission Units

These emission units shall not start operation until the loading hopper 443F, the covered belt conveyors 441V and 441V2, and the bucket elevator 441V1 are removed from the alternate raw material feed system SF-1.

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) when operation begins, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP and the PMP extension notification do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation. The PMP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(d) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to

the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission unit vented to the control equipment in operation.

Testing Requirements [326 IAC 2-7-6(1)]

C.7 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.9 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

If required by Section D, all monitoring and record keeping requirements shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

C.10 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.11 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:

(1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.

(2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan and the Permittee

documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan to include such response steps taken.

(b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:

(1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or

(2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.

(3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, the IDEM, OAQ shall be promptly notified of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.

(4) Failure to take reasonable response steps shall constitute a violation of the permit.

(c) The Permittee is not required to take any further response steps for any of the following reasons:

(1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.

(3) An automatic measurement was taken when the process was not operating.

(4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.

(d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B-Deviations from Permit Requirements and Conditions.

(e) The Permittee shall record all instances when response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

(f) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.12 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

C.13 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.14 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

(a) Records of all required data, reports and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.15 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

(a) The reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(a) One alternate raw material feeding system, identified as SF-1, with a maximum throughput rate of 40,000 pounds of raw material (primarily slag) per hour, including the following:

(1) One (1) slag pile, identified as SP1, with a maximum throughput rate of 40,000 pounds of slag per hour.

(2) Four (4) loading hoppers, identified as 485F, 486F, 487F, and 488F, each with a maximum capacity of 12.5 tons and a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the loading hopper 443F.

(3) Four (4) covered belt conveyors, identified as 485V, 486V, 487V, and 488V, each with a maximum throughput rate of 40,000 pounds of raw material per hour, each connected to loading hoppers 485F, 486F, 487F, and 488F, respectively.

(4) Two (2) covered belt conveyors, identified as 489V and 490V, each with a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the loading belt conveyor 441V.

(5) One (1) bucket elevator, identified as 492V, with a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the bucket elevator 441V1.

(6) One (1) covered belt conveyor, identified as 494V, with a maximum throughput rate of 40,000 pounds of raw material per hour.

(7) Paved roads with particulate emissions controlled by vacuum sweeping.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

The throughput rate to the alternate raw material feeding system SF-1 shall not exceed 87,600 tons per twelve (12) consecutive month period with compliance determined by the end of each month. This limit is equivalent to 2.51 tons per year of PM emissions and 1.07 tons per year of PM10 emissions. This raw material feeding system was originally permitted in #133-14452-00002, issued February 26, 2002. Combined with the emissions for the secondary crusher system, which was permitted in permit #133-14452-00002, the emissions for both systems are limited to less than 25 tons per year of PM and less than 15 tons per year of PM10. Therefore, the requirements of 326 IAC 2-2 are not applicable.

D.1.2 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emissions from each of the loading hoppers, belt conveyors or bucket elevator shall not exceed 30.5 pounds per hour when operating at a process weight rate of 40,000 pounds per hour, based on the following equation:

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.1.3 General Provisions Relating to NESHAP [326 IAC 20-1][40 CFR Part 63, Subpart A]

The provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 20-1, apply to these loading hoppers, belt conveyors, and bucket elevator except when otherwise specified in 40 CFR Part 63, Subpart LLL.

D.1.4 NESHAP Emissions Limitation [40 CFR 63, Subpart LLL]

Pursuant to 40 CFR 63.1348 (Emissions Standards and Operating Limits), upon startup, the visible emissions from the loading hoppers, belt conveyors, and bucket elevator shall not exceed ten percent (10%) opacity.

Compliance Determination Requirements

D.1.5 PM and PM10 Emissions

Compliance with Condition D.1.1 shall be demonstrated within 30 days of the end of each month based on the total throughput weight of raw material for the most recent twelve (12) consecutive month period.

D.1.6 Testing Requirements [326 IAC 2-7-6(1),(6)]

No later than 180 days after startup the Permittee shall demonstrate initial compliance with the limits established in Condition D.1.4 by conducting a test in accordance with 40 CFR 63.1349, Method 9 of 40 CFR Part 60, Appendix A, and Section C - Performance Testing.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.7 NESHAP Monitoring Requirements [40 CFR 63, Subpart LLL]

Pursuant to 40 CFR 63.1350 (Monitoring Requirements), the Permittee shall prepare a written operations and maintenance plan for these loading hoppers, belt conveyors, and bucket elevator upon startup. The plan shall include the following information:

(a) Procedures for proper operation and maintenance of the affected sources and associated air pollution control device(s) in order to meet the emissions limit in Condition D.1.4; and

(b) Procedures to be used to periodically monitor the facilities listed in this section, which are subject to opacity standards under 40 CFR 63.1348. Such procedures must include the following provisions:

(1) The Permittee shall conduct a monthly 1-minute visible emissions test of each affected source except for the finish mills and raw mills, in accordance with 40 CFR 60, Appendix A, Method 22. The test must be conducted while the affected source is in operation.

(2) If no visible emissions are observed in six consecutive monthly tests for any affected source, the Permittee may decrease the frequency of testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the Permittee shall resume testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(3) If no visible emissions are observed during the semi-annual test for any affected source, the Permittee may decrease the frequency of testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual test, the Permittee shall resume testing of that affected source on a

monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(4) If visible emissions are observed during any Method 22 test, the Permittee must conduct a 6-minute test of opacity in accordance with 40 CFR 60, Appendix A, Method 9. The Method 9 test must begin within one hour of any observation of visible emissions.

Failure to comply with any provision of the operations and maintenance plan shall be a violation of the standard.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.8 Record Keeping Requirements

(a) To document compliance with Condition D.1.1, the Permittee shall maintain records for the raw material feeding system SF-1 in accordance with (1) and (2) below.

(1) The total raw material throughput weight for each month; and

(2) The throughput weight of the raw material for each compliance period.

(b) To document compliance with the NESHAP 40 CFR 63, Subpart LLL, the Permittee shall maintain all records required by 40 CFR 63.1355. These records include the following:

(1) The Permittee shall maintain files of all information (including all reports and notifications) required by 40 CFR 60.1355(a) recorded in a form suitable and readily available for inspection and review as required by 40 CFR 63.10(b)(1).

(2) The Permittee shall maintain records for each affected source as required by 40 CFR 63.10(b)(2) and (3) including:

(A) All documentation supporting initial notifications and notifications of compliance status under 40 CFR 63.9.

(B) All records of applicability determination, including supporting analyses.

(c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.9 Reporting Requirements

(a) A quarterly summary of the information to document compliance with Condition D.1.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(b) To document compliance with the NESHAP 40 CFR 63, Subpart LLL, the Permittee shall report the information required by 40 CFR 63.1354, including, but not limited to the following:

(1) The plan required by Condition D.1.7 shall be submitted to IDEM, OAQ and U.S. EPA upon startup.

(2) As required by 40 CFR 63.10(d)(2), the Permittee shall report the results of performance tests as part of the notification of compliance status, required in Section B - NESHAP Reporting Requirements.

(3) As required by 40 CFR 63.10(d)(3), the Permittee shall report the opacity results from tests required by 40 CFR 63.1349.

(4) As required by 40 CFR 63.10(d)(5), if actions taken by the Permittee during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan specified in 40 CFR 63.6(e)(3), the Permittee shall state such information in a semiannual report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report may be submitted simultaneously with the excess emissions and continuous monitoring system performance reports.

(5) Pursuant to 40 CFR 63.10(d)(5)(ii), any time an action taken by the Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures in the startup, shutdown, and malfunction plan, the Permittee shall report the actions taken for that event within 2 working days after commencing actions inconsistent with the plan, by telephone call to the OAQ Compliance Section at (317) 232-8440 or facsimile (FAX) transmission at (317) 233-6865. The immediate report shall be followed by a letter within 7 working days after the end of the event, certified by the Permittee, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.

(c) In addition to being submitted to the address listed in Section C - General Reporting Requirements, all reports and the operation and maintenance plan submitted pursuant to 40 CFR 63, Subpart A shall also be submitted to the U.S. EPA at the following address:

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Pursuant to 40 CFR 63.10(d)(5)(i) and (ii), the reports submitted by the Permittee shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

PART 70 SOURCE MODIFICATION CERTIFICATION

Source Name: Lone Star Industries, Inc.
Source Address: 3301 South County Rd 150 West, Greencastle, Indiana 46135
Mailing Address: P.O. Box 482, Greencastle, IN 46135
Source Modification No.: 133-16137-00002

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

9 Test Result (specify) _____

9 Report (specify) _____

9 Notification (specify) _____

9 Affidavit (specify) _____

9 Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Source Modification Quarterly Report

Source Name: Lone Star Industries, Inc.
Source Address: 3301 South County Rd 150 West, Greencastle, Indiana 46135
Mailing Address: P.O. Box 482, Greencastle, IN 46135
Source Modification No.: 133-16137-00002
Facility: The alternate raw material feeding system (SF-1)
Parameter: The raw material throughput
Limit: Less than 87,600 tons per twelve (12) consecutive month period

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a
Part 70 Minor Source Modification

Source Background and Description

Source Name:	Lone Star Industries, Inc.
Source Location:	3301 South County Rd. 150 West, Greencastle, Indiana 46135
County:	Putnam
SIC Code:	3241
Operation Permit No.:	T133-6927-00002
Operation Permit Issuance Date:	Pending
Minor Source Modification No.:	133-16137-00002
Permit Reviewer:	ERG/YC

The Office of Air Quality (OAQ) has reviewed a modification application from Lone Star Industries, Inc. relating to the construction and operation of the following emission units:

(a) One alternate raw material feeding system, identified as SF-1, with a maximum throughput rate of 40,000 pounds of raw material (primarily slag) per hour, including the following:

(1) One (1) slag pile, identified as SP1, with a maximum throughput rate of 40,000 pounds of slag per hour.

(2) Four (4) loading hoppers, identified as 485F, 486F, 487F, and 488F, each with a maximum capacity of 12.5 tons and a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the loading hopper 443F.

(3) Four (4) covered belt conveyors, identified as 485V, 486V, 487V, and 488V, each with a maximum throughput rate of 40,000 pounds of raw material per hour, each connected to loading hoppers 485F, 486F, 487F, and 488F, respectively.

(4) Two (2) covered belt conveyors, identified as 489V and 490V, each with a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the loading belt conveyor 441V.

(5) One (1) bucket elevator, identified as 492V, with a maximum throughput rate of 40,000 pounds of raw material per hour, replacing the bucket elevator 441V1.

(6) One (1) covered belt conveyor, identified as 494V, with a maximum throughput rate of 40,000 pounds of raw material per hour.

(7) Paved roads with particulate emissions controlled by vacuum sweeping.

History

On June 24, 2002, Lone Star Industries, Inc. submitted an application to the OAQ requesting to modify the permitted alternate raw material feed system (SF-1), which was permitted under permit #133-14452-00002, issued February 26, 2002. This modification includes the following:

(a) Replacing the loading hopper 443F with four (4) loading hoppers (485F, 486F, 487F, and 488F) and adding four (4) belt conveyors (485V, 486V, 487V, and 488V) to each associated hopper. The total capacities of the four loading hoppers remain the same as the one for the previously permitted hopper 443F (50 tons).

(b) Replacing the previously permitted belt conveyor 441V with the covered belt conveyors 489V and 490V to increase the length of belt.

(c) Replacing the previously permitted belt conveyor 441V2 with the covered belt conveyor 491V.

(d) Replacing the previously permitted bucket elevator 441V1 with the bucket elevator 492V.

(e) Adding an additional covered belt conveyor 494V to transport the raw material (primarily slag) to the appropriate location on the kiln feed shelf.

(f) Limiting the annual throughput rate of the raw material feeding system (SF-1) to less than 87,600 tons per twelve (12) consecutive month period.

These modifications at the facility will not result in debottlenecking or increase utilization of other existing units. The kiln production rates will not be affected after these changes. Lone Star Industries, Inc. submitted an application for a Part 70 permit on October 15, 1996; however, the Part 70 permit has not been issued yet.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Part 70 Minor Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on June 24, 2002, and July 18, 2002.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 4).

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material

combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	3.62
PM-10	1.88
SO_2	-
VOC	-
CO	-
NO_x	-

Justification for Modification

The Part 70 Operating permit is being modified through a Part 70 Minor Source Modification. This modification is being performed pursuant to: (1) 326 IAC 2-7-10.5(d)(4) as the potential to emit any regulated pollutant is less than 25 tons per year; and (2) to 326 IAC 2-7-10.5(d)(6) as these units are subject to National Emission Standard for Hazardous Air Pollutants (NESHAP) (40 CFR 63, Subpart LLL).

County Attainment Status

The source is located in Putnam County.

Pollutant	Status
PM-10	Attainment
SO_2	Attainment
NO_2	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Putnam County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Putnam County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(c) Fugitive Emissions
Since this type of operation is one of the 28 listed source categories under 326 IAC 2-2 and since there are applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive emissions are counted towards determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	402
PM-10	177
SO_2	3,278
VOC	24.4
CO	2,831
NOx	4,389

(a) This existing source is a major stationary source because an attainment regulated pollutant is emitted at a rate of 100 tons per year or more and it is one of the 28 listed source categories.

(b) These emissions are based upon the Technical Support Document (TSD) for CP133-10159-00002, issued April 16, 1999.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
Storage Piles	Less than 0.18	Less than 0.06	--	--	--	--	--
Loading Hoppers	Less than 0.39	Less than 0.19	--	--	--	--	--
Belt Conveyors	Less than 0.55	Less than 0.55	--	--	--	--	--
Paved Roads	1.39	0.27	--	--	--	--	--
Total Emissions from this Project (raw material feeding system SF-1)	Less than 2.51	Less than 1.07	--	--	--	--	--
*PTE of Permit #133-14452-00002 (except the raw material feeding system)	13.89	13.89	--	--	--	--	--
Total Emissions from this project and Permit #133-14452-00002	Less than 16.40	Less than 14.96	--	--	--	--	--

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
PSD Threshold	25	15	40	40	100	40	NA

* Note: Permit #133-14452-00002 includes one secondary crusher system and one raw material feeding system (SF-1), which is modified in this permit. Therefore, the potential to emit of the modification for PSD review purposes shall be the potential to emit of the secondary crusher system in permit #133-14452-00002 and the modified raw material feeding system in this project.

This modification to an existing major stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.

(b) The source is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Portland Cement Plants (40 CFR 63.1340-1358, Subpart LLL) because its potential to emit of total HAPs is greater than 25 tons per year. The loading hoppers, the belt conveyors, and the bucket elevator are part of the alternate raw material feed system (SF-1), which was permitted under permit #133-14452-00002 (issued on February 26, 2002) and the requirements of 40 CFR 63, Subpart LLL have applied to these units.

Pursuant to 40 CFR 63.1340, the affected sources include each conveying system transfer point and bulk loading or unloading system. Therefore, the transfer points of the l loading hoppers, belt conveyors, and the bucket elevator in this modification are subject to 40 CFR 63, Subpart LLL and shall not cause to be discharged any gases from these affected sources which exhibit opacity in excess of ten percent, pursuant to 40 CFR 63.1348.

State Rule Applicability - Individual Facilities

326 IAC 2-2 (Prevention of Significant Deterioration)

In order for this construction project to be considered a PSD minor modification, the throughput rate to the alternate raw material feeding system SF-1 shall be limited to 87,600 tons per twelve (12) consecutive month period with compliance determined by the end of each month. This limit is equivalent to 2.51 tons per year of PM emissions and 1.07 tons per year of PM10 emissions. This raw material feeding system was original permitted in #133-14452-00002, issued February 26, 2002. Combined with the emissions for the secondary crusher system, which was permitted in permit #133-14452-00002, the emissions for both systems are limited to less than 25 tons per year of PM and less than 15 tons per year of PM10. Therefore, the requirements of 326 IAC 2-2 are not applicable.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (60 hour period.

326 IAC 6-3-2 (Manufacturing Processes)

The allowable particulate emissions from each unit of the alternate raw material feed system (SF-1) shall be limited to 30.5 lbs/hr when the process weight rate is 40,000 lbs/hr.

The pounds per hour limitation was calculated using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

According to the emission calculations (see Appendix A), the potential to emit PM from each unit of the raw material feeding system SF-1 is less than the limit above. Therefore, these units are in compliance with 326 IAC 6-3-2.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

1. The loading hoppers, the belt conveyors, and the bucket elevator are subject to 40 CFR, Subpart LLL and have applicable compliance monitoring conditions as specified below:

   Pursuant to 40 CFR 63.1350 (Monitoring Requirements), the Permittee shall prepare a written operations and maintenance plan for these loading hoppers, belt conveyors, and bucket elevator upon startup. The plan shall include the following information:

   (a) Procedures for proper operation and maintenance of the affected sources and associated air pollution control device(s) in order to meet the emissions limit in 40 CFR 63.1348; and

(b) Procedures to be used to periodically monitor the facilities listed in this section, which are subject to opacity standards under 40 CFR 63.1348. Such procedures must include the following provisions:

(1) The Permittee shall conduct a monthly 1-minute visible emissions test of each affected source except for the finish mills and raw mills, in accordance with 40 CFR 60, Appendix A, Method 22. The test must be conducted while the affected source is in operation.

(2) If no visible emissions are observed in six consecutive monthly tests for any affected source, the Permittee may decrease the frequency of testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the Permittee shall resume testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(3) If no visible emissions are observed during the semi-annual test for any affected source, the Permittee may decrease the frequency of testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual test, the Permittee shall resume testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

(4) If visible emissions are observed during any Method 22 test, the Permittee must conduct a 6-minute test of opacity in accordance with 40 CFR 60, Appendix A, Method 9. The Method 9 test must begin within one hour of any observation of visible emissions.

These monitoring conditions are necessary because the loading hoppers, the belt conveyors, and the bucket elevator must operate properly to ensure compliance with 40 CFR 63.1348 (NESHAP) and 326 IAC 6-3 (Manufacturing Processes).

Conclusion

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Minor Source Modification No. 133-16137-00002.

Appendix A: Emission Calculations
PM/PM10 Emissions
From the Slag Storage Piles

Company Name: Lone Star Industries, Inc.
Address City IN Zip: 3301 S. County Rd. 150 West, Greencastle, IN 46135
MSM: 133-16137-00002
Reviewer: ERG/YC
Date: July 19, 2002

1. Emission Factors:

According to AP42, Chapter 13.2.4 - Aggregate Handling and Storage Piles, the PM and PM10 emission factors for the slag storage piles can be estimated by the following equation:

$$Ef = \frac{.0032 \times (U/5)^{1.3} \times k}{(M/2)^{1.4}}$$

where:

Ef =	Emission Factor (lbs/ton)	
k =	Particle size multiplier =	0.74 for PM and 0.35 for PM10
U =	Mean wind speed (mph) =	9.8 mph
M =	Moisture content (%) =	2.5 %

Therefore,

PM Emission Factor =	0.0042 lbs/ton process
PM10 Emission Factor =	0.0015 lbs/ton process

2. Potential to Emit PM/PM10 before Control for the storage pile:

Max. Throughput Rate = **40,000 lbs/hr**

Hourly Potential PM Emissions =	40,000 lbs/hr x 1 ton/2000 lbs x 0.0042 lbs/ton =	**0.083 lbs/hr**
Annual Potential PM Emissions =	0.176 lbs/hr x 8760 hr/yr x 1 ton/2000 lbs =	**0.36 tons/yr**
Hourly Potential PM10 Emissions =	40,000 lbs/hr x 1 ton/2000 lbs x 0.0015 lbs/ton =	**0.029 lbs/hr**
Annual Potential PM10 Emissions =	0.086 lbs/hr x 8760 hr/yr x 1 ton/2000 lbs =	**0.13 tons/yr**

3. Potential to Emit PM/PM10 with the Annual Throughput Rate Limit:

Annual Throughput Rate Limit = **87,600 tons/yr**

Annual Potential to Emit PM =	87600 tons/yr x 0.0042 lbs/ton x 1 tons/2000 lbs =	**0.18 tons/yr**
Annual Potential to Emit PM10 =	87600 tons/yr x 0.0015 lbs/ton x 1 tons/2000 lbs =	**0.06 tons/yr**

Appendix A: Emission Calculations
PM/PM10 Emissions
From the Four (4) Loading Hoppers (485F, 486F, 487F, and 488F)

Company Name: Lone Star Industries, Inc.
Address City IN Zip: 3301 S. County Rd. 150 West, Greencastle, IN 46135
MSM: 133-16137-00002
Reviewer: ERG/YC
Date: July 19, 2002

1. Process Descriptions:

Raw Material:	**Slag from the metal manufacturing industries**	
Max. Capacity:	**12.5**	**tons/each**
Max Throughput Rate:	**40,000**	**lbs/hr/4 hoppers (only one hopper is operated at a time)**
Annual Throughput Limit:	**87,600**	**tons/yr/4 hoppers**
***PM Emission Factor:**	**0.0088**	**lbs/ton**
***PM10 Emission Factor:**	**0.0043**	**lbs/ton**

*There is no emission factor in AP-42 for slag handling process. This emission factor is the one for low silt batch drop for iron and steel mill in AP-42, Table 12.5.4, which is the most similar loading process in AP-42.

2. Potential to Emit PM/PM10 before Control from All Four (4) Loading Hoppers:

Hourly Potential PM Emissions =	40,000 lbs/hr x 1 ton/2000 lbs x 0.0088 lbs/ton =	**0.176 lbs/hr**
Annual Potential PM Emissions =	0.176 lbs/hr x 8760 hr/yr x 1 ton/2000 lbs =	**0.77 tons/yr**
Hourly Potential PM10 Emissions =	40,000 lbs/hr x 1 ton/2000 lbs x 0.0043 lbs/ton =	**0.086 lbs/hr**
Annual Potential PM10 Emissions =	0.086 lbs/hr x 8760 hr/yr x 1 ton/2000 lbs =	**0.38 tons/yr**

3. Potential to Emit PM/PM10 with the Annual Throughput Rate Limit:

Annual Potential to Emit PM =	87600 tons/yr x 0.0088 lbs/ton x 1 tons/2000 lbs =	**0.39 tons/yr**
Annual Potential to Emit PM10 =	87600 tons/yr x 0.0043 lbs/ton x 1 tons/2000 lbs =	**0.19 tons/yr**

Appendix A: Emission Calculations
PM/PM10 Emissions
From the Enclosed Belt Conveyors (485V - 492V, and 494V)

Company Name: Lone Star Industries, Inc.
Address City IN Zip: 3301 S. County Rd. 150 West, Greencastle, IN 46135
MSM: 133-16137-00002
Reviewer: ERG/YC
Date: July 19, 2002

1. Process Descriptions:

Raw Material:	**Slag from the metal manufacturing industries**
Max Throughput Rate:	**40,000 lbs/hr/each**
Annual Throughput Limit:	**87,600 tons/yr/each**
***PM/PM10 Emission Factor:**	**0.0014 lbs/ton**

*There is no emission factor in AP-42 for slag handling process. This emission factor is the one for conveyor transfer point for crushed stone in AP-42, Table 11.19.2-2 (SCC #3-05-020-06), which is the most similar conveying process in AP-42.
Assume PM emissions equal to PM10 emissions.

2. Potential to Emit before Control from 9 Belt Conveyors:

There are 9 conveyor transfer points total.

Hourly Potential PM/PM10 Emissions = 40,000 lbs/hr x 1 ton/2000 lbs x 0.0014 lbs/ton = **0.028 lbs/hr/point**

Annual Potential PM/PM10 Emissions = 0.028 lbs/hr/point x 8760 hr/yr x 1 ton/2000 lbs x 9 points = **1.10 tons/yr**

3. Potential to Emit PM/PM10 with the Annual Throughput Limit:

Annual Potential to Emit PM/PM10 = 87600 tons/yr/point x 0.0014 lbs/ton x 1 tons/2000 lbs x 9 points = **0.55 tons/yr**

Note: The bucket elevator 492V has two exhausts, which are connected to belt conveyors 491V and 494V, respectively. Therefore, the emissions from the bucket elevator 492V are counted as the emissions from the conveyor transfer points, which are included in the emission calculations above for the belt conveyors.

Appendix A: Emission Calculations
Potential Emissions
From the Paved Roads (Fugitive Emissions)

Company Name: Lone Star Industries, Inc.
Address City IN Zip: 3301 S. County Rd. 150 West, Greencastle, IN 46135
MSM: 133-16137-00002
Reviewer: ERG/YC
Date: July 19, 2002

1. Emission Factors:

According to AP42, Chapter 13.2.1 - Unpaved Roads, the PM emission factors of the paved roads can be estimated from the following equation:

$$E = k \times (sL/2)^{0.65} \times (w/3)^{1.5}$$

where:

E =	emission factor (lb/VMT)			
k =	particle size mulitplier =	0.016	for PM10;	0.082 for PM
sL =	silt content/loading =	0.05		
W =	mean vehicle weight =	27.5	tons	
M =	surface material moisture content (%) =	3	%	
VMT =	vehicle mile traveled =	13467	mils/yr	

2. Emissions From the Tri-axle Trucks:

PM10 Emission Factor =	$0.016 \times (0.05/2)^{0.65} \times (27.5/3)1.5 =$	0.0404	lbs/VMT
PM Emission Factor =	$0.082 \times (0.05/2)^{0.65} \times (27.5/3)1.5 =$	0.2069	lbs/VMT

Potential PM10 Emissions = 13467 mile/yr x 0.0404 lbs/mile x 1 ton/2000 lbs = **0.27 tons/yr**
Potential PM Emissions = 13467 mile/yr x 0.2069 lbs/mile x 1 ton/2000 lbs = **1.39 tons/yr**